

Cell & Tissue Research

Volume 295 1999

Editors

K. Unsicker, Heidelberg
(Coordinating Editor)

M.J. Cavey, Calgary

W.W. Franke, Heidelberg

J.F. Morris, Oxford

A. Oksche, Giessen

B. Russell, Chicago

J.R. Sladek, North Chicago

N.J. Strausfeld, Tucson

Cooperating Editors

A.D. Blest, Canberra

Elisabetta Dejana, Milano

R. Dermietzel, Bochum

A.C. Enders, Davis

J.B. Furness, Melbourne

H.G. Hartwig, Düsseldorf

N. Hirokawa, Tokyo

A.F. Holstein, Hamburg

Brigitte M. Jockusch, Braunschweig

Chaya Kalcheim, Jerusalem

M. Kawata, Kyoto

R.O. Kelley, Albuquerque

H.-W. Korf, Frankfurt/M.

B. Krisch, Kiel

W. Kummer, Giessen

R.R. Markwald, Charleston

K. Miyazono, Tokyo

D.R. Nässel, Stockholm

R. Pabst, Hannover

J.M. Polak, London

F.G. Rathjen, Berlin

E. Reale, Hannover

J.-P. Revel, Pasadena

H. Risau, Bad Nauheim

E.M. Rodríguez, Valdivia

D.R. Roop, Houston

D.W. Scheuermann, Antwerp

H. Schmalbruch, Copenhagen

G. Schütz, Heidelberg

Maya Simionescu, Bucharest

F. Sundler, Lund

Andrée Tixier-Vidal, Paris

Y. Toh, Fukuoka

L. Vollrath, Mainz

E.D. Wachsmuth, Basel

R.M. Zinkernagel, Zürich



Springer

Cell & Tissue Research

This journal was founded in 1924 as the *Zeitschrift für Zellen- und Gewebelehre*, from Vol. 2 (1925) it was published with the subtitle: Continuation of the Schultze-Waldeyer-Hertwig Archiv für mikroskopische Anatomie. *Zeitschrift für Zellforschung und mikroskopische Anatomie* (Vols. 1–20) (1934) as: *Zeitschrift für wissenschaftliche Biologie* (Abteilung B) edited by R. Goldschmidt, W. von Möllendorff, H. Bauer, J. Seiler. Vols. 2–28 (1938) edited by R. Goldschmidt and W. von Möllendorff. Vols. 29–33 (1944) as: *Zeitschrift für Zellforschung und mikroskopische Anatomie, Abteilung A, Allgemeine Zellforschung und mikroskopische Anatomie*, edited by W. von Möllendorff and J. Seiler, from Vol. 34 without the subtitle, Abteilung A, Allgemeine Zellforschung und mikroskopische Anatomie. From Vol. 34 (1949) edited by W. Bargmann, J. Seiler; from Vol. 53 (1960) edited by W. Bargmann, B. Scharrer, J. Seiler; from Vol. 83 (1967) edited by W. Bargmann, D.S. Farner, A. Oksche, B. Scharrer, J. Seiler; from Vol. 125 (1972) edited by W. Bargmann, D.S. Farner, F. Knowles, A. Oksche, B. Scharrer. Beginning with Vol. 125 (1972) with the subtitle Cell and Tissue Research, beginning with Vol. 148 (1974) under the title Cell and Tissue Research and the subtitle Continuation of *Zeitschrift für Zellforschung und mikroskopische Anatomie* and beginning with Vol. 235 (1984) under the title Cell and Tissue Research. Beginning with Vol. 164 (1975), edited by W. Bargmann, D.S. Farner, B. Lofts, A. Oksche, B. Scharrer and L. Vollrath; as of Vol. 193 (1978), edited by D.S. Farner, B. Lofts, A. Oksche (Coordinating Editor), B. Scharrer and L. Vollrath; from Vol. 227 (1981), edited by D.S. Farner, B. Lofts, J.F. Morris, A. Oksche (Coordinating Editor), B. Scharrer and L. Vollrath; from Vol. 228 (1983), edited by D.S. Farner, D.E. Kelly, B. Lofts, J.F. Morris, A. Oksche (Coordinating Editor), B. Scharrer and L. Vollrath. Beginning with Vol. 235 (1984), title changed to Cell and Tissue Research (no subtitle). As of Vol. 251 (1988), edited by H. Altner, D.S. Farner, B. Lofts, J.F. Morris, A. Oksche (Coordinating Editor), B. Scharrer, N.J. Strausfeld and L. Vollrath. Beginning with Vol. 252/3 (1988), M.J. Cavey became one of the editors. From Vol. 254/1 (1988), edited by H. Altner, M.J. Cavey, B. Lofts, J.F. Morris, A. Oksche (Coordinating Editor), B. Scharrer, N.J. Strausfeld and L. Vollrath. Starting with Vol. 268/1 (1992), J.R. Sladek became one of the editors. As of Vol. 275/1 (1994) B. Russell became one of the editors. From Vol. 283/2 (1996), edited by K. Unsicker (Coordinating Editor), H. Altner, M.J. Cavey, W.W. Franke, J.F. Morris, A. Oksche, B. Russell, J.R. Sladek, N.J. Strausfeld and L. Vollrath. From Vol. 291/1 (1998), edited by K. Unsicker (Coordinating Editor), M.J. Cavey, W.W. Franke, J.F. Morris, A. Oksche, B. Russell, J.R. Sladek, N.J. Strausfeld.

Published: Vols. 1–33 (1924–1947) Julius Springer, Berlin, Vols. 34–35 (1948–1950) Springer, Wien, from Vol. 36 (1951) Springer, Berlin, Heidelberg.

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA: Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0302-766X, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

The Canada Institute for Scientific and Technical Information (CISTI) provides a comprehensive, world-wide document delivery service for all Springer-Verlag journals. For more information, or to place an order for a copyright-cleared Springer-Verlag document, please contact Client Assistant, Document Delivery, Canada Institute for Scientific and Technical Information, Ottawa, K1A 0S2, Canada (Tel: 613-993-9251; FAX: 613-952-8243; e-mail: cisti.docdel@nrc.ca).

This journal is included in the ADONIS service.

In the ADONIS service copies of individual articles can be printed out from compact discs (CD-ROM) on demand. An explanatory leaflet giving further details of the scheme is available from the publishers on request.

Typesetters and Printers: Stürtz AG, Würzburg

© Springer-Verlag Berlin · Heidelberg 1999

Springer-Verlag GmbH & Co. KG

D-14197 Berlin, Germany

Printed in Germany

Contents of Volume 295

- Abascal I → Avilés M
 Albieri A → Peters TJ
 Anadón R → Pombal MA
 Ashby LP → Brueckner JK
 Aumüller G → Groos S
 Auzan C → Pelletier J
 Avilés M, Castells MT, Abascal I, Martínez-Menárguez JA, Dráber P, Kan FWK, Ballesta J: Cytochemical localization of GalNAc and GalNAc β 1,4Gal β 1,4 disaccharide in mouse zona pellucida 269
- Badiu C, Coculescu M, Møller M: Arginine vasotocin mRNA revealed by in situ hybridization in bovine pineal gland cells 225
- Bailhache T → Tollemer H
 Ballesta J → Avilés M
 Belair M-F → Karam H
 Belfiore A → Belluardo N
 Belluardo N, Mudd G, Caniglia G, Corsaro M, Cheng Q, Frasca F, Belfiore A, Condorelli DF: Expression of neurotrophins, GDNF, and their receptors in rat thyroid tissue 467
- Ben-Ya'acov A → Minichiello J
 Berthoud HR → Collins JJ
 Bevilacqua E → Peters TJ
 Blanco E → Carretero J
 Blaschitz A → Cervar M
 Bora N, Defoe D, Smith SB: Evidence of decreased adhesion between the neural retina and retinal pigmented epithelium of the *Mif^{fl}* (vitiligo) mutant mouse 65
- Braunewell K-H, Gundelfinger ED: Intracellular neuronal calcium sensor proteins: a family of EF-hand calcium-binding proteins in search of a function 1
- Brookes SJH → Tassicker BC
 Brueckner JK, Ashby LP, Prichard JR, Porter JD: Vestibulo-ocular pathways modulate extraocular muscle myosin expression patterns 477
- Bruneval P → Karam H
 Buttle KF → Lossinsky AS
- Callsen-Cencic P, Hoheisel U, Kaske A, Mense S, Tenschert S: The controversy about spinal neuronal nitric oxide synthase: Under which conditions is it up- or downregulated? 183
- Campbell L → Newman GR
 Caniglia G → Belluardo N
 Carretero J, Vázquez G, Blanco E, Rubio M, Santos M, Martín-Clavijo A, Torres JL, Vázquez R: Immunohistochemical evidence of the presence of aromatase P450 in the rat hypophysis 419
- Castells MT → Avilés M
 Cervar M, Blaschitz A, Dohr G, Desoye G: Paracrine regulation of distinct trophoblast functions in vitro by placental macrophages 297
- Chapman BM → Peters TJ
 Chemineau P → Pelletier J
 Chen D → Zhao C-M
 Cheng Q → Belluardo N
- Clauser E → Pelletier J
 Clozel M → Karam H
 Coculescu M → Badiu C
 Collins JJ, Lin CE, Berthoud HR, Papka RE: Vagal afferents from the uterus and cervix provide direct connections to the brainstem 43
- Condorelli DF → Belluardo N
 Corsaro M → Belluardo N
 Costa M → Tassicker BC
 Crane LH → Peters TJ
- Daveau A → Pelletier J
 David I → Reinecke M
 Defoe D → Bora N
 Desoye G → Cervar M
 Dikranian K → Steudel W
 Ding Y → Fraser SP
 Djamgoz MBA → Fraser SP
 Dohr G → Cervar M
 Domanico V → Meyer EP
 Donndelinger TM → Fyffe WE
 Dráber P → Avilés M
- Eckert M, Predel R, Gundel M: Periviscerokinin-like immunoreactivity in the nervous system of the American cockroach 159
- Edelmann VM → Martone ME
 Edmonds PA → Fyffe WE
 Elekes K, Nässel DR: Pigment-dispersing hormone-like immunoreactive neurons in the central nervous system of the gastropods, *Helix* and *Lymnaea* 339
- Ellisman MH → Martone ME
 Eppler E → Reinecke M
- Fabian-Fine R, Volkandt W, Seyfarth E-A: Peripheral synapses at identifiable mechanosensory neurons in the spider *Cupiennius salei*: synapsin-like immunoreactivity 13
- Fan J → Unoki H
 Foste CS → Fraser SP
 Frasca F → Belluardo N
 Fraser SP, Ding Y, Liu A, Foste CS, Djamgoz MBA: Tetrodotoxin suppresses morphological enhancement of the metastatic MAT-LyLu rat prostate cancer cell line 505
- Fritzsch B, Pirvola U, Ylikoski J: Making and breaking the innervation of the ear: neurotrophic support during ear development and its clinical implications 369
- Furness JB → Kuramoto H
 Fyffe WE, Kronz JD, Edmonds PA, Donndelinger TM: Effect of high-level oxygen exposure on the peroxidase activity and the neuromelanin-like pigment content of the nerve net in the earthworm, *Lumbricus terrestris* 349
- Gäde G → Marco HG
 Galizia CG, McIlwrath SL, Menzel R: A digital three-dimensional atlas of the honeybee antennal lobe based on optical sections acquired by confocal microscopy 383
- García-Arrarás JE, Torres-Avillán I: Developmental expression of galanin-like immunoreactivity by members of the avian sympathoadrenal cell lineage 33
- Georges D → Reinecke M
 Godleski MS → Tierney AJ
 González A → Pombal MA
 Gronewold TMA, Sasse F, Lünsdorf H, Reichenbach H: Effects of rhizopodin and latrunculin B on the morphology and on the actin cytoskeleton of mammalian cells 121
- Groos S, Wilhelm B, Renneberg H, Riva A, Reichelt R, Seitz J, Aumüller G: Simultaneous apocrine and merocrine secretion in the rat coagulating gland 495
- Gumbleton M → Newman GR
 Gundel M → Eckert M
 Gundelfinger ED → Braunewell K-H
- Håkanson R → Zhao C-M
 Hamlin GP → Peters TJ
 Hearn CJ → Minichiello J
 Hennig GW → Tassicker BC
 Hoheisel U → Callsen-Cencic P
 Hott M → Molténi A
- Ishibashi K → Suzuki-Toyota F
 Ito T → Ozawa H
 Itskovitz (Eldor) J → Karam H
- Jacobson M → Jones R
 Jacobson M → Steudel W
 Jasani B → Newman GR
 Jones R, Steudel W, White S, Jacobson M, Low R: Microvessel precursor smooth muscle cells express head-inserted smooth muscle myosin heavy chain (SM-B) isoform in hyperoxic pulmonary hypertension 453
- Jones RC → Steudel W
- Kah O → Tollemer H
 Kan FWK → Avilés M
 Kaneko T → Watanabe S
 Karam H, Valdenaire O, Belair M-F, Prigent-Sassy C, Rakotosalama A, Clozel M, Itskovitz (Eldor) J, Bruneval P: The endothelin system in human and monkey ovaries: in situ gene expression of the different components 101
- Kaske A → Callsen-Cencic P
 Kawabuchi M → Toma H
 Kawano H → Kuramoto H
 Kawata M → Ozawa H
 Koyama H → Matsuzaki T
 Krah K, Meller K: Axonal and dendritic transport in Purkinje cells of cerebellar slice cultures studied by microinjection of horseradish peroxidase 55
- Kronz JD → Fyffe WE
 Kuramoto H, Kawano H, Sakamoto H, Furness JB: Motor innervation by enteric nerve fibers containing both nitric oxide synthase and galanin immunoreactivities in the striated muscle of the rat esophagus 241
- Kuraoka A → Toma H

- Leprince J → Tollemer H
 Lin CE → Collins JJ
 Lintunen M → Zhao C-M
 Liu A → Fraser SP
 Lossinsky AS, Buttle KF, Pluta R, Mossakowski MJ, Wiśniewski HM: Immunocytochemical expression of intercellular adhesion molecule-1 in endothelial cell vesiculotubular structures and vesiculo-vacuolar organelles in blood-brain barrier development and injury 77
 Low R → Jones R
 Lünsdorf H → Gronewold TMA
 Maeda T → Ohshima H
 Marco HG, Gäde G: A comparative immunocytochemical study of the hyperglycaemic, moult-inhibiting and vitellogenesis-inhibiting neurohormone family in three species of decapod Crustacea 171
 Marie PJ → Molténi A
 Marín O → Pombal MA
 Martín-Clavijo A → Carretero J
 Martínez-Menárguez JA → Avilés M
 Martone ME, Edelman VM, Ellisman MH, Nef P: Cellular and subcellular distribution of the calcium-binding protein NCS-1 in the central nervous system of the rat 395
 Matsuzaki T, Suzuki T, Koyama H, Tanaka S, Takata K: Aquaporin-5 (AQP5), a water channel protein, in the rat salivary and lacrimal glands: immunolocalization and effect of secretory stimulation 513
 McIlwrath SL → Galizia CG
 Meller K → Krah K
 Mense S → Callsen-Cencic P
 Menzel R → Galizia CG
 Meyer EP, Domanico V: Microvillar orientation in the photoreceptors of the ant *Cataglyphis bicolor* 355
 Mikkelsen HB, Thuneberg L: *Op/op* mice defective in production of functional colony-stimulating factor-1 lack macrophages in muscularis externa of the small intestine 485
 Minichiello J, Ben-Ya'acov A, Hearn CJ, Needham B, Newgreen DF: Induction of epithelio-mesenchymal transformation of quail embryonic neural cells by inhibition of atypical protein kinase-C 195
 Miyazono K → Nakajima Y
 Modrowski D → Molténi A
 Molténi A, Modrowski D, Hott M, Marie PJ: Alterations of matrix- and cell-associated proteoglycans inhibit osteogenesis and growth response to fibroblast growth factor-2 in cultured rat mandibular condyle and calvaria 523
 Mossakowski MJ → Lossinsky AS
 Möller M → Badiu C
 Mudò G → Belluardo N
 Nakajima Y, Miyazono K, Nakamura H: Immunolocalization of latent transforming growth factor- β binding protein-1 (LTBP1) during mouse development: possible roles in epithelial and mesenchymal cytodifferentiation 257
 Nakamura H → Nakajima Y
 Nakamura K → Toma H
 Nässel DR → Elekes K
 Needham B → Minichiello J
 Nef P → Martone ME
 Newgreen DF → Minichiello J
 Newman GR, Campbell L, Ruhland C von, Jasani B, Gumbleton M: Caveolin and its cellular and subcellular immunolocalization in lung alveolar epithelium: implications for alveolar epithelial type I cell function 111
 Obinata T → Soeno Y
 Ochiai I → Ozawa H
 Ohshima H, Maeda T, Takano Y: The distribution and ultrastructure of class II MHC-positive cells in human dental pulp 151
 Ozawa H, Ito T, Ochiai I, Kawata M: Cellular localization and distribution of glucocorticoid receptor immunoreactivity and the expression of glucocorticoid receptor messenger RNA in rat pituitary gland. A combined double immunohistochemistry study and in situ hybridization histochemical analysis 207
 Panula P → Zhao C-M
 Papka RE → Collins JJ
 Pelletier J, Auzan C, Daveau A, Clauser E, Chemineau P: Sheep 5HT_{2A} receptors: partial cloning of the coding sequence and mRNA localization by in situ hybridization in the ewe hypothalamus 231
 Peters TJ, Albieri A, Bevilacqua E, Chapman BM, Crane LH, Hamlin GP, Seiki M, Soares MJ: Differentiation-dependent expression of gelatinase B/matrix metalloproteinase-9 in trophoblast cells 287
 Pillar TM, Seitz HJ: Oxidative stress response induced in rat primary hepatocyte monolayers by mechanical removal of adherent cells 363
 Pirvola U → Fritzsche B
 Pluta R → Lossinsky AS
 Pombal MA, Yáñez J, Marín O, González A, Anadón R: Cholinergic and GABAergic neuronal elements in the pineal organ of lampreys, and tract-tracing observations of differential connections of pinealofugal neurons 215
 Porter JD → Brueckner JK
 Powers JF, Shahsavari M, Tsokas P, Tischler AS: Nerve growth factor receptor signaling in proliferation of normal adult rat chromaffin cells 21
 Predel R → Eckert M
 Prichard JR → Brueckner JK
 Prigent-Sassy C → Karam H
 Rakotosalama A → Karam H
 Rattananont P → Tierney AJ
 Reichelt R → Groos S
 Reichenbach H → Gronewold TMA
 Reinecke M, Eppler E, David I, Georges D: Immunohistochemical evidence for the presence, localization and partial coexistence of insulin, insulin-like growth factor I and relaxin in the protochordate *Ciona intestinalis* 331
 Renneberg H → Groos S
 Riva A → Groos S
 Rubio M → Carretero J
 Ruhland C von → Newman GR
 Sakamoto H → Kuramoto H
 Sanders KM → Wang XY
 Santos M → Carretero J
 Sasse F → Gronewold TMA
 Seiki M → Peters TJ
 Seitz HJ → Pillar TM
 Seitz J → Groos S
 Seyfarth E-A → Fabian-Fine R
 Shahsavari M → Powers JF
 Shimada Y → Soeno Y
 Smith SB → Bora N
 Soares MJ → Peters TJ
 Soeno Y, Shimada Y, Obinata T: BDM (2,3-butanedione monoximide), an inhibitor of myosin-actin interaction, suppresses myofibrillogenesis in skeletal muscle cells in culture 307
 Steudel W, Watanabe M, Dikranian K, Jacobson M, Jones RC: Expression of nitric oxide synthase isoforms (NOS II and NOS III) in adult rat lung in hyperoxic pulmonary hypertension 317
 Steudel W → Jones R
 Suzuki T → Matsuzaki T
 Suzuki-Toyota F, Ishibashi K, Yuasa S: Immunohistochemical localization of a water channel, aquaporin 7 (AQP7), in the rat testis 279
 Takano Y → Ohshima H
 Takata K → Matsuzaki T
 Tanaka M → Toma H
 Tanaka S → Matsuzaki T
 Tassicker BC, Hennig GW, Costa M, Brookes SJH: Rapid anterograde and retrograde tracing from mesenteric nerve trunks to the guinea-pig small intestine in vitro 437
 Teitsma CA → Tollemer H
 Tenschert S → Callsen-Cencic P
 Thuneberg L → Mikkelsen HB
 Tierney AJ, Godleski MS, Rattananont P: Serotonin-like immunoreactivity in the stomatogastric nervous systems of crayfishes from four genera 537
 Tischler AS → Powers JF
 Tollemer H, Teitsma CA, Leprince J, Bailhache T, Vandesande F, Kah O, Tonon MC, Vaudry H: Immunohistochemical localization and biochemical characterization of two novel decapeptides derived from POMC-A in the trout hypothalamus 409
 Toma H, Nakamura K, Kuraoka A, Tanaka M, Kawabuchi M: Three-dimensional structures of c-Kit-positive cellular networks in the guinea pig small intestine and colon 425
 Tonon MC → Tollemer H
 Torres JL → Carretero J
 Torres-Avilán I → García-Arrarás JE
 Tsokas P → Powers JF
 Unoki H, Fan J, Watanabe T: Low-density lipoproteins modulate endothelial cells to secrete endothelin-1 in a polarized pattern: a study using a culture model system simulating arterial intima 89
 Valdenaire O → Karam H
 Vandesande F → Tollemer H
 Vaudry H → Tollemer H

Vázquez G → Carretero J
 Vázquez R → Carretero J
 Volknandt W → Fabian-Fine R

Wang XY, Sanders KM, Ward SM: Intimate relationship between interstitial cells of Cajal and enteric nerves in the guinea-pig small intestine 247

Ward SM → Wang XY

Watanabe M → Steudel W

Watanabe S, Kaneko T, Watanabe Y: Immunocytochemical detection of mito-

chondria-rich cells in the brood pouch epithelium of the pipefish, *Syngnathus schlegeli*: structural comparison with mitochondria-rich cells in the gills and larval epidermis 141

Watanabe T → Unoki H

Watanabe Y → Watanabe S

White S → Jones R

Wilhelm B → Groos S

Wiśniewski HM → Lossinsky AS

Yáñez J → Pombal MA

Ylikoski J → Fritzsche B

Yuasa S → Suzuki-Toyota F

Zhao C-M, Chen D, Lintunen M, Panula P, Håkanson R: Effects of reserpine on ECL-cell ultrastructure and histamine compartmentalization in the rat stomach 131

Indexed in *Current Contents*,
Index Medicus, and *EMBASE*

